NEWS

Future weather extremes likely to break new records

Author: Grahame Madge
00:01 (UTC+1) on Thu 22 Oct 2020

Increasingly extreme weather is one of the most damaging and costly impacts from climate change.

New projections for rainfall and temperature extremes

A new set of projections from the Met Office reveal that extremes of rainfall and high temperatures are expected to exceed the extreme conditions that we have already experienced in the UK, breaking records and placing increasing challenges on health, infrastructure and services.

The latest addition to the set of UK Climate Projections (known as UKCP) will be published by the Met Office later today [Thursday 22 October, 2020].

A major focus for the UKCP projections is to help users – from Government, organisations, engineers, professionals and individuals – to understand more about how climate change is likely to impact the UK.

Professor Jason Lowe OBE is head of the UKCP programme for the Met Office. He said: "Some of the most severe consequences of climate change will come from an increasing frequency and severity of extreme weather events. We know that on average the UK is projected to become hotter and drier in summer, and warmer and wetter in winter – this tells us a lot, but for those assessing climate change risk it's important to better understand how extreme weather events are likely to change too".

The updated projections – which will be available free to all UKCP users – look at extreme weather events for maximum temperature in summer; and maximum total rainfall over one-day and five-day periods. Users can examine local areas – down to 25km resolution – and look at the model simulated rise for rare high temperature and high rainfall events which may happen on average only one-in-twenty, fifty or even one hundred years.

Dr Simon Brown was one of the key scientists working on the project. He added: "If you're designing a flood-relief scheme or building a railway, for example, you can't assume that the climate will remain the same because we know that it is already changing. The things you want to know will be how much heat or rainfall will my project have to cope with and that is what our projections will do."

To help users see the scale of change across the UK, the Met Office has published data on how maximum temperatures and one and five-day rainfall totals may rise in future. The new results were calculated by adjusting present day extremes in line with modelled future changes in extremes out to the end of the century. Example are shown for each of the four UK capital cities.

In conclusion, Dr Lizzie Kendon said: "Future work will be to understand these changes in terms of the weather types or storms that drive these changes, to better understand the nature of the changes and help adaptation planning. In additional new UKCP Local projections – down to 2.2km resolution – are planned to be released in Spring 2021 providing updated information on changes in hourly rainfall extremes important for understanding future risks of flash flooding."

Summer temperature

Table 1: The table shows the most likely maximum summer temperature (Jun Jul Aug) for a one-in-fifty-year event to the nearest C for the medium emission scenario RCP4.5

	1950	2020	2050	2100
London	35 C	36 C	37 C	39 C
Cardiff	33 C	34 C	35 C	37 C
Edinburgh	29 C	30 C	31 C	33 C
Belfast	27 C	28 C	29 C	31 C

One-day rainfall

Table 2: The table shows the most likely one-day rainfall total in winter (Dec Jan Feb) for a one-in-fifty-year event to the nearest mm for the medium emission scenario RCP4.5

	1950	2020	2050	2100
London	33mm	35mm	37mm	39mm
Cardiff	46mm	48mm	49mm	52mm
Edinburgh	40mm	42mm	43mm	46mm
Belfast	39mm	41mm	42mm	44mm

Five day rainfall

Table 3: The table shows the most likely five-day rainfall total in winter (Dec Jan Feb) for a one-in-fifty-year event to the nearest mm for the medium emission scenario RCP4.5

	1950	2020	2050	2100
London	102mm	107mm	110mm	114mm
Cardiff	128mm	131mm	134mm	140mm
Edinburgh	98mm	100mm	102mm	107mm
Belfast	102mm	104mm	106mm	110mm

Further information on the latest update to the UKCP suite of products can be found in a discussion on our Mostly Weather podcast.

Met Office
© Crown Copyright